



#3

# SEQUENCE LISTING

<110> Helmut SCHWAB  
Anton GLIEDER  
Christoph KRATKY  
Ingrid DREVENY  
Peter POCHLAUER  
Wolfgang SKRANC  
Herbert MAYRHOFER  
Irma WIRTH  
Rudolf NEUHOFER  
Rodolfo BONA

<120> New genes containing a DNA sequence coding for a hydroxynitrile lyase, recombinant proteins derived therefrom and having hydroxynitrile lyase activity, and use thereof

<130> 2001-1882A/LC/01553

<140> 10/046,232

<141> 2002-01-16

<150> A60/2001

<151> 2001-01-16

<150> A523/2001

<151> 2001-04-03

<160> 24

<170> PatentIn Ver. 2.1

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<213> Artificial Sequence

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<223> Description of the artificial sequence: Synthetic oligonucleotide primer

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<211> 33

<212> DNA

<213> Artificial Sequence

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<223> Description of the artificial sequence: Synthetic oligonucleotide primer

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<213> Artificial Sequence

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<223> Description of the artificial sequence: Synthetic oligonucleotide primer

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<210> 4

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<212> DNA

<213> Artificial Sequence

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<223> Description of the artificial sequence: Synthetic oligonucleotide primer

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<223> Description of the artificial sequence: Synthetic oligonucleotide primer

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<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of the artificial sequence: Synthetic oligonucleotide primer

<400> 6

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<210> 7

<211> 56

<212> DNA

<213> Artificial Sequence

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<223> Description of the artificial sequence: Synthetic oligonucleotide primer

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<210> 19  
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 <212> DNA  
 <213> Prunus amygdalus

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 <211> 559  
 <212> PRT

<213> Prunus amygdalus

<400> 20

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Ser	Ala	Ile	Gly	Val	Ile	Tyr	Thr	Asp	Ser	Asp	Gly	Asn	Ser	His	Gln
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 Gln Phe Val Tyr Asp Asn Pro Arg Asn Phe Ile Asn Ile Leu Pro Pro  
 325 330 335  
 Asn Pro Ile Glu Ala Ser Val Val Thr Val Leu Gly Ile Arg Ser Asp  
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 Tyr Tyr Gln Val Ser Leu Ser Ser Leu Pro Phe Ser Thr Pro Pro Phe  
 355 360 365  
 Ser Leu Phe Pro Thr Thr Ser Tyr Pro Leu Pro Asn Ser Thr Phe Ala  
 370 375 380  
 His Ile Val Ser Gln Val Pro Gly Pro Leu Ser His Gly Ser Val Thr  
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 405 410 415  
 Tyr Tyr Ser Asn Ser Thr Asp Leu Ala Asn Cys Val Ser Gly Met Lys  
 420 425 430  
 Lys Leu Gly Asp Leu Leu Arg Thr Lys Ala Leu Glu Pro Tyr Lys Ala  
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 Arg Asp Val Leu Gly Ile Asp Gly Phe Asn Tyr Leu Gly Val Pro Leu  
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 Pro Glu Asn Gln Thr Asp Asp Ala Ser Phe Glu Thr Phe Cys Leu Asp  
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 Asn Val Ala Ser Tyr Trp His Tyr His Gly Gly Ser Leu Val Gly Lys  
 485 490 495  
 Val Leu Asp Asp Ser Phe Arg Val Met Gly Ile Lys Ala Leu Arg Val  
 500 505 510  
 Val Asp Ala Ser Thr Phe Pro Tyr Glu Pro Asn Ser His Pro Gln Gly  
 515 520 525  
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<210> 21  
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 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of the artificial sequence: DNA coding for hybrid protein PamHNL5xGOX

<400> 21

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<210> 22

<211> 534

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of the artificial sequence: Hybrid protein PamHNL5xGOX

<400> 22

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Asp Thr Ser Ser Glu Gly Ser Tyr Asp Tyr Ile Val Ile Gly Gly Gly
 35             40            45

Thr Ser Gly Cys Pro Leu Ala Ala Thr Leu Ser Glu Lys Tyr Lys Val
 50             55            60

Leu Leu Leu Glu Arg Gly Thr Ile Ala Thr Glu Tyr Pro Asn Thr Leu
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65	70	75	80
Thr Ala Asp Gly Phe Ala Tyr Asn Leu Gln Gln Gln Asp Asp Gly Lys	85	90	95
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Ala Arg Ile Leu Gly Gly Thr Thr Ile Ile Asn Ala Gly Val Tyr Ala	115	120	125
Arg Ala Asn Ile Ser Phe Tyr Ser Gln Thr Gly Ile Glu Trp Asp Leu	130	135	140
Asp Leu Val Asn Lys Thr Tyr Glu Trp Val Glu Asp Ala Ile Val Val	145	150	155
Lys Pro Asn Asn Gln Ser Trp Gln Ser Val Ile Gly Glu Gly Phe Leu	165	170	175
Glu Ala Gly Ile Leu Pro Asp Asn Gly Phe Ser Leu Asp His Glu Ala	180	185	190
Gly Thr Arg Leu Thr Gly Ser Thr Phe Asp Asn Asn Gly Thr Arg His	195	200	205
Ala Ala Asp Glu Leu Leu Asn Lys Gly Asp Pro Asn Asn Leu Leu Val	210	215	220
Ala Val Gln Ala Ser Val Glu Lys Ile Leu Phe Ser Ser Asn Thr Ser	225	230	235
Asn Leu Ser Ala Ile Gly Val Ile Tyr Thr Asp Ser Asp Gly Asn Ser	245	250	255
His Gln Ala Phe Val Arg Gly Asn Gly Glu Val Ile Val Ser Ala Gly	260	265	270
Thr Ile Gly Thr Pro Gln Leu Leu Leu Leu Ser Gly Val Gly Pro Glu	275	280	285
Ser Tyr Leu Ser Ser Leu Asn Ile Thr Val Val Gln Pro Asn Pro Tyr	290	295	300
Val Gly Gln Phe Val Tyr Asp Asn Pro Arg Asn Phe Ile Asn Ile Leu	305	310	315
Pro Pro Asn Pro Ile Glu Ala Ser Val Val Thr Val Leu Gly Ile Arg	325	330	335
Ser Asp Tyr Tyr Gln Val Ser Leu Ser Ser Leu Pro Phe Ser Thr Pro	340	345	350
Pro Phe Ser Leu Phe Pro Thr Thr Ser Tyr Pro Leu Pro Asn Ser Thr	355	360	365
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Lys Ala Arg Asp Val Leu Gly Ile Asp Gly Phe Asn Tyr Leu Gly Val		
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Pro Leu Pro Glu Asn Gln Thr Asp Asp Ala Ser Phe Glu Thr Phe Cys		
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Leu Asp Asn Val Ala Ser Tyr Trp His Tyr His Gly Gly Ser Leu Val		
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<210> 23  
 <211> 2087  
 <212> DNA  
 <213> Prunus amygdalus

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 <212> PRT  
 <213> *Prunus amygdalus*

<400> 24

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Val	Leu	His	Leu	Gln	Tyr	Ser	Glu	Val	His	Ser	Leu	Ala	Thr	Thr	Ser
			20					25					30		
Asp	His	Asp	Phe	Ser	Tyr	Leu	Ser	Phe	Ala	Tyr	Asp	Ala	Thr	Asp	Leu
		35					40					45			
Glu	Leu	Glu	Gly	Ser	Tyr	Asp	Tyr	Val	Ile	Val	Gly	Gly	Gly	Thr	Ser
	50					55					60				
Gly	Cys	Pro	Leu	Ala	Ala	Thr	Leu	Ser	Glu	Lys	Tyr	Lys	Val	Leu	Val
	65				70					75				80	
Leu	Glu	Arg	Gly	Ser	Leu	Pro	Thr	Ala	Tyr	Pro	Asn	Val	Leu	Thr	Ala
				85					90					95	
Asp	Gly	Phe	Val	Tyr	Asn	Leu	Gln	Gln	Glu	Asp	Asp	Gly	Lys	Thr	Pro
			100					105					110		
Val	Glu	Arg	Phe	Val	Ser	Glu	Asp	Gly	Ile	Asp	Asn	Val	Arg	Gly	Arg
		115					120					125			
Val	Leu	Gly	Gly	Thr	Ser	Ile	Ile	Asn	Ala	Gly	Val	Tyr	Ala	Arg	Ala
	130						135					140			
Asn	Thr	Ser	Ile	Tyr	Ser	Ala	Ser	Gly	Val	Asp	Trp	Asp	Met	Asp	Leu
145					150					155					160
Val	Asn	Gln	Thr	Tyr	Glu	Trp	Val	Glu	Asp	Thr	Ile	Val	Tyr	Lys	Pro
				165					170					175	

Asn Ser Gln Ser Trp Gln Ser Val Thr Lys Thr Ala Phe Leu Glu Ala  
 180 185 190  
 Gly Val His Pro Asn His Gly Phe Ser Leu Asp His Glu Glu Gly Thr  
 195 200 205  
 Arg Ile Thr Gly Ser Thr Phe Asp Asn Lys Gly Thr Arg His Ala Ala  
 210 215 220  
 Asp Glu Leu Leu Asn Lys Gly Asn Ser Asn Asn Leu Arg Val Gly Val  
 225 230 235 240  
 His Ala Ser Val Glu Lys Ile Ile Phe Ser Asn Ala Pro Gly Leu Thr  
 245 250 255  
 Ala Thr Gly Val Ile Tyr Arg Asp Ser Asn Gly Thr Pro His Gln Ala  
 260 265 270  
 Phe Val Arg Ser Lys Gly Glu Val Ile Val Ser Ala Gly Thr Ile Gly  
 275 280 285  
 Thr Pro Gln Leu Leu Leu Leu Ser Gly Val Gly Pro Glu Ser Tyr Leu  
 290 295 300  
 Ser Ser Leu Asn Ile Pro Val Val Leu Ser His Pro Tyr Val Gly Gln  
 305 310 315 320  
 Phe Leu His Asp Asn Pro Arg Asn Phe Ile Asn Ile Leu Pro Pro Asn  
 325 330 335  
 Pro Ile Glu Pro Thr Ile Val Thr Val Leu Gly Ile Ser Asn Asp Phe  
 340 345 350  
 Tyr Gln Cys Ser Phe Ser Ser Leu Pro Phe Thr Thr Pro Pro Phe Gly  
 355 360 365  
 Phe Phe Pro Ser Ala Ser Tyr Pro Leu Pro Asn Ser Thr Phe Ala His  
 370 375 380  
 Phe Ala Ser Lys Val Ala Gly Pro Leu Ser Tyr Gly Ser Leu Thr Leu  
 385 390 395 400  
 Lys Ser Ser Ser Asn Val Arg Val Ser Pro Asn Val Lys Phe Asn Tyr  
 405 410 415  
 Tyr Ser Asn Leu Thr Asp Leu Ser His Cys Val Ser Gly Met Lys Lys  
 420 425 430  
 Ile Gly Glu Leu Leu Ser Thr Asp Ala Leu Lys Pro Tyr Lys Val Glu  
 435 440 445  
 Asp Leu Pro Gly Val Glu Gly Phe Asn Ile Leu Gly Ile Pro Leu Pro  
 450 455 460  
 Lys Asp Gln Thr Asp Asp Ala Ala Phe Glu Thr Phe Cys Arg Glu Ser  
 465 470 475 480

Val	Ala	Ser	Tyr	Trp	His	Tyr	His	Gly	Gly	Cys	Leu	Val	Gly	Lys	Val
				485					490					495	
Leu	Asp	Gly	Asp	Phe	Arg	Val	Thr	Gly	Ile	Asn	Ala	Leu	Arg	Val	Val
			500					505					510		
Asp	Gly	Ser	Thr	Phe	Pro	Tyr	Thr	Pro	Ala	Ser	His	Pro	Gln	Gly	Phe
		515					520					525			
Tyr	Leu	Met	Leu	Gly	Arg	Tyr	Val	Gly	Ile	Lys	Ile	Leu	Gln	Glu	Arg
	530					535					540				
Ser	Ala	Ser	Asp	Leu	Lys	Ile	Leu	Asp	Ser	Leu	Lys	Ser	Ala	Ala	Ser
545					550					555					560
Leu	Val	Leu													